

Ayahuasca

This article is about the psychoactive brew. For the vine, see *Banisteriopsis caapi*. For other uses, see Ayahuasca (disambiguation).

Ayahuasca (usually pronounced /aɪjəˈwæskə/ or /ˈaɪjəˈwɑːskə/), also commonly called **yagé** (/jɑːheɪ/), is a psychedelic brew made out of *Banisteriopsis caapi* vine alone or in combination with various plants. It is either mixed with the leaves of dimethyltryptamine (DMT)-containing species of shrubs from the genus *Psychotria* or with the leaves of the *Justicia pectoralis* plant which does not contain DMT. The brew, first described academically in the early 1950s by Harvard ethnobotanist Richard Evans Schultes, who found it employed for divinatory and healing purposes by the native peoples of Amazonian Peru, is known by a number of different names (see below).

It has been reported that some effects can be felt from consuming the caapi vine alone, but that DMT-containing plants (such as *Psychotria*) remain inactive when drunk as a brew without a source of monoamine oxidase inhibitor (MAOI) such as *B. caapi*. How indigenous peoples discovered the synergistic properties of the plants used in the ayahuasca brew remains unclear. Many indigenous Amazonian people say they received the instructions directly from plants and plant spirits.

Effects

People who have consumed ayahuasca report having spiritual revelations regarding their purpose on earth, the true nature of the universe as well as deep insight into how to be the best person they possibly can. This is viewed by many as a spiritual awakening and what is often described as a rebirth. In addition, it is often reported that individuals feel they gain access to higher spiritual dimensions and make contact with various spiritual or extra dimensional beings who can act as guides or healers.

Author Don Jose Campos claims that people may experience profound positive life changes subsequent to consuming ayahuasca and Ralph Metzner states it is often viewed as one of the most effective tools of enlightenment. Vomiting can follow ayahuasca ingestion; this purging is considered by many shamans and experienced users of ayahuasca to be an essential part of the experience as it represents the release of negative energy and emotions built up over the course of one's life. Other such reports of this purging has come in the form of nausea, diarrhea, and hot/cold flashes.

The ingestion of ayahuasca can also cause significant but temporary emotional and psychological distress (the 'bad trip' experience). Long-term negative effects are not known.



Ayahuasca cooking in the Napo region of Ecuador



Ayahuasca cooking

Role of shamans

For various reasons some shamans and experienced users of ayahuasca advise against consuming ayahuasca when not in the presence of one or several well-trained shamans.

In some areas there are purported brujos who masquerade as real shamans and who entice tourists to drink ayahuasca in their presence. Real shamans believe one of the purposes for this is to steal one's energy and/or power, which they believe every person has a stockpile of. It is believed to be very important for individuals seeking an ayahuasca experience to find a reputable shaman before hastily drinking with anyone who claims to be a shaman or offers one ayahuasca.

Nomenclature

Ayahuasca is known by many names throughout Northern South America and Brazil.

Ayahuasca is the Hispanicized spelling of a word in the Quechua languages, which are spoken in the Andean states of Ecuador, Bolivia, Peru, and Colombia. Speakers of Quechua languages or of the Aymara language may prefer the spelling *ayawaska*. This word refers both to the liana *Banisteriopsis caapi*, and to the healing brew prepared from it. In the Quechua languages, *aya* means "corpse, dead body", and *waska* means "rope".^[1] The word *ayahuasca* has been variously translated as "liana of the soul", "liana of the dead", and "spirit liana".^[2]

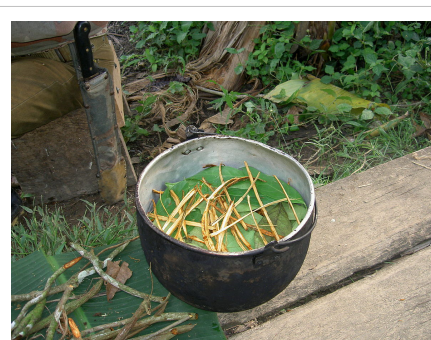
In Brazil, the brew and the liana are informally called either *caapi* or *cipó*; the latter is the Portuguese word for liana (or woody climbing vine). In the União do Vegetal of Brazil, an organised spiritual tradition in which people drink ayahuasca, the brew is prepared exclusively from *B. caapi* and *P. viridis*. Adherents of União do Vegetal call this brew *hoasca* or *vegetal*.^{Wikipedia:Citation needed}

In the Tucanoan languages it is called *yagé* or *yajé* (both pronounced [ja'he]).^[3] The Achuar people and Shuar people of Ecuador and Peru call it *natem*, whereas the Sharanahua peoples of Peru call it *shori*.

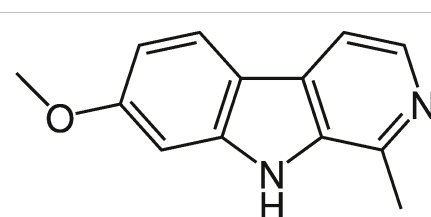
Chemistry

Harmala alkaloids are MAO-inhibiting *beta*-carbolines. The three most studied harmala alkaloids in the *B. caapi* vine are harmine, harmaline and tetrahydroharmine. Harmine and harmaline are selective and reversible inhibitors of monoamine oxidase A (MAO-A), while tetrahydroharmine is a weak serotonin reuptake inhibitor (SRI).

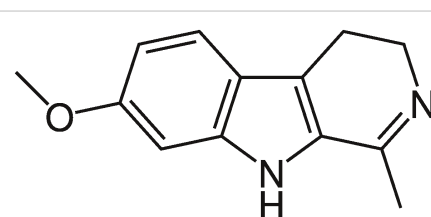
This inhibition of MAO-A allows DMT to diffuse unmetabolized past the membranes in the stomach and small intestine, and eventually cross the blood–brain barrier (which, by itself, requires no MAO-A inhibition) to activate receptor sites in the brain. Without RIMAs or the MAOI of MAO-A, DMT would be oxidised (and thus rendered biologically inactive) by monoamine oxidase enzymes in the digestive tract.^[4]



Ayahuasca

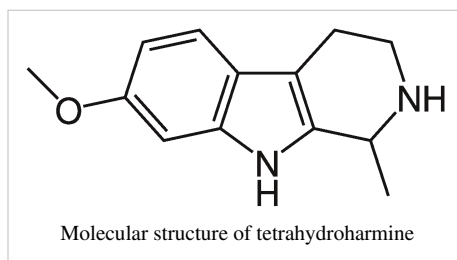


Molecular structure of harmine



Molecular structure of harmaline

Individual polymorphisms in the cytochrome P450-2D6 enzyme affect the ability of individuals to metabolize harmine. Some natural tolerance to habitual use of ayahuasca (roughly once weekly) may develop through upregulation of the serotonergic system. A phase 1 pharmacokinetic study on ayahuasca (as Hoasca) with 15 volunteers was conducted in 1993, during the Hoasca Project. A review of the Hoasca Project has been published.



Preparation

Sections of *Banisteriopsis caapi* vine are macerated and boiled alone or with leaves from any of a number of other plants, including *Psychotria viridis* (*chacruna*) or *Diplopterys cabrerana* (also known as *chaliponga*). The resulting brew contains the powerful psychedelic drug DMT and MAO inhibiting harmala alkaloids, which are necessary to make the DMT orally active.

Brews can also be made with no DMT-containing plants; *Psychotria viridis* being substituted by plants such as *Justicia pectoralis*, *Brugmansia*, or sacred tobacco, also known as *Mapacho* (*Nicotiana rustica*), or sometimes left out with no replacement. The potency of this brew varies radically from one batch to the next, both in potency and psychoactive effect, based mainly on the skill of the shaman or brewer, as well as other admixtures sometimes added and the intent of the ceremony. Natural variations in plant alkaloid content and profiles also affect the final concentration of alkaloids in the brew, and the physical act of cooking may also serve to modify the alkaloid profile of harmala alkaloids.

Traditional brew

Traditional ayahuasca brews are often made with *Banisteriopsis caapi* as an MAOI, although Dimethyltryptamine sources and other admixtures vary from region to region. There are several varieties of caapi, often known as different "colors", with varying effects, potencies, and uses.

DMT admixtures:

- *Psychotria viridis* (Chacruna)^[5] – leaves
- *Diplopterys cabrerana* (Chaliponga, *Banisteriopsis rusbyana*) – leaves
- *Psychotria carthagenensis* (Amyruca) – leaves

Other common admixtures:

- *Justicia pectoralis*
- *Brugmansia* (Toé)
- *Nicotiana rustica* (Mapacho, variety of tobacco)
- *Ilex guayusa*, a relative of yerba mate

Common admixtures with their associated ceremonial values and spirits:

- **Ayahuma bark:** Dead Head Tree. Provides protection and is used in healing susto (soul loss from spiritual fright or trauma). Head spirit is a headless giant.



Ayahuasca being prepared in the Napo region of Ecuador

- **Capirona bark:** Provides cleansing and protection. It is noted for its smooth bark, white flowers, and hard wood. Head spirits look Caucasian.
- **Chullachaki Caspi bark** (*Brysonima christianeae*): Provides cleansing to the physical body. Used to transcend physical body ailments. Head spirits look Caucasian.
- **Lopuna Blanca bark:** Provides protection. Head spirits take the form of giants.
- **Punga Amarilla bark:** Yellow Punga. Provides protection. Used to pull or draw out negative spirits or energies. Head spirit is the yellow anaconda.
- **Remo Caspi bark:** Oar Tree. Used to move dense or dark energies. Head spirit is a native warrior.
- **Wyra (huaira) Caspi bark** (*Cedrelinga catanaeformis*): Air Tree. Used to create purging, transcend gastro/intestinal ailments, calm the mind, and bring tranquility. Head spirit looks African.
- **Shiwawaku bark:** Brings purple medicine to the ceremony. Provides healing and protection.
- **Camu camu Gigante:** Head spirit comes in the form of a large dark skinned giant. He provides medicine and protection in the form of warding off dark and demonic spirits.
- **Tamamuri:** Head spirit looks like an old Asian warrior with a long white wispy beard. He carries a staff and manages thousands of spirits to protect the ceremony and send away energies that are purged from the participants.
- **Uchu Sanango:** Head of the sanango plants. Provides power, strength, and protection. Head doctor spirit is a grandfather with a long, gray-white beard.
- **Huacapurana:** Giant tree of the Amazon with very hard bark. Its head spirits come in the form of Amazonian giants and provide a strong grounding presence in the ceremony.



Freshly harvested caapi vine ready for preparation



Banisteriopsis caapi preparation



Beaten caapi ready for boiling



Caapi cooking over an open fire

Usage

Ayahuasca is used largely as a religious sacrament. Users of ayahuasca in non-traditional contexts often align themselves with the philosophies and cosmologies associated with ayahuasca shamanism, as practiced among indigenous peoples like the Urarina of Peruvian Amazonia. While non-native users know of the spiritual applications of ayahuasca, a less well-known traditional usage focuses on the medicinal properties of ayahuasca. When used for its medicinal purposes ayahuasca affects the human consciousness for less than six hours, beginning half an hour after consumption, and peaking after two hours. Ayahuasca also has cardiovascular effects, moderately increasing both heart rate and diastolic blood pressure. In some cases, individuals experience significant psychological stress during the experience. It is for this reason that extreme caution should be taken with those who may be at risk of heart disease.



Ayahuasca

The psychedelic effects of ayahuasca include visual and auditory stimulation, the mixing of sensory modalities, and psychological introspection that may lead to great elation, fear, or illumination. Its purgative properties are important (known as *la purga* or "the purge"). The intense vomiting and occasional diarrhea it induces can clear the body of worms and other tropical parasites, and harmala alkaloids themselves have been shown to be anthelmintic. Thus, this action is twofold; a direct action on the parasites by these harmala alkaloids (particularly harmine in ayahuasca) works to kill the parasites, and parasites are expelled through the increased intestinal motility that is caused by these alkaloids.

Dietary taboos are often associated with the use of ayahuasca. In the rainforest, these tend towards the purification of one's self – abstaining from spicy and heavily-seasoned foods, excess fat, salt, caffeine, acidic foods (such as citrus) and sex before, after, or during a ceremony. A diet low in foods containing tyramine has been recommended, as the speculative interaction of tyramine and MAOIs could lead to a hypertensive crisis. However, evidence indicates that harmala alkaloids act only on MAO-A, in a reversible way similar to moclobemide (an antidepressant that does not require dietary restrictions). Dietary restrictions are not used by the highly urban Brazilian ayahuasca church União do Vegetal, suggesting the risk is much lower than perceived, and probably non-existent.

Non-traditional usage

In the late 20th century, the practice of ayahuasca drinking began spreading to Europe, North America and elsewhere. The first ayahuasca 'Churches', affiliated with the Brazilian Santo Daime, were established in the Netherlands. A legal case was filed against two of the Church's leaders, Hans Bogers (one of the original founders of the Dutch Santo Daime community) and Geraldine Fijneman (the head of the Amsterdam Santo Daime community). Bogers and Fijneman were charged with distributing a controlled substance (DMT); however, the prosecution was unable to prove that the use of ayahuasca by members of the Santo Daime constituted a sufficient threat to public health and order that it warranted denying their rights to religious freedom under ECHR Article 9. The 2001 verdict of the Amsterdam district court is an important precedent. Since then groups that are not affiliated to the Santo Daime have used ayahuasca, and a number of different 'styles' have been developed, such as the non-religious approach developed by Daniel Waterman in 2001,^[6] popularly termed Ayahuasca Open Style (AOS).^[7]

In modern Europe and North America, ayahuasca analogues are often prepared using non-traditional plants which contain the same alkaloids. For example, seeds of the Syrian rue plant can be used as a substitute for the ayahuasca vine, and the DMT-rich *Mimosa hostilis* is used in place of *chakruna*. Australia has several indigenous plants which are popular among modern ayahuasqueros there, such as various DMT-rich species of *Acacia*.

The name 'ayahuasca' specifically refers to a botanical decoction that contains *Banisteriopsis caapi*. A synthetic version, known as pharmahuasca is a combination of an appropriate MAOI and typically DMT. In this usage, the DMT is generally considered the main psychoactive active ingredient, while the MAOI merely preserves the psychoactivity of orally ingested DMT, which would otherwise be destroyed in the gut before it could be absorbed in the body. Thus, ayahuasqueros and most others working with the brew maintain that the *B. caapi* vine is the defining ingredient, and that this beverage is not ayahuasca unless *B. caapi* is in the brew. The vine is considered to be the "spirit" of ayahuasca, the gatekeeper and guide to the otherworldly realms. Wikipedia:Citation needed

Ayahuasca may be prepared using several plants not traditionally used in South America:

DMT admixtures:

- *Acacia maidenii* (Maiden's Wattle) *not all plants are 'active strains'; meaning some plants will have very little DMT and others larger amounts, *Acacia phlebophylla*, and other Acacias, most commonly employed in Australia – bark
- *Acacia obtusifolia* Has a similar range to *Acacia Maidenii* – bark
- *Anadenanthera peregrina*, *A. colubrina*, *A. excelsa*, *A. macrocarpa*
- *Mimosa hostilis* (Jurema) – root bark – not traditionally employed with ayahuasca by any existing cultures, though likely it was in the past. Popular in Europe and North America.

MAOI:

- Harmal (*Peganum harmala*, Syrian rue) – seeds
- Passion flower
- synthetic MAOIs

History

In the 16th century, Christian missionaries from Spain and Portugal first encountered indigenous South Americans using ayahuasca; their earliest reports described it as the work of the devil.^[8] In the 20th century, the active chemical constituent of *B. caapi* was named *telepathine*, but it was found to be identical to a chemical already isolated from *Peganum harmala* and was given the name harmaline. Beat writer William Burroughs read a paper by Richard Evans Schultes on the subject and sought out *yagé* in the early 1950s while traveling through South America in the hopes that it could relieve or cure opiate addiction (see *The Yage Letters*). Ayahuasca became more widely known when the McKenna brothers published their experience in the Amazon in *True Hallucinations*. Dennis McKenna later studied the pharmacology, botany, and chemistry of ayahuasca and oo-koo-he, which became the subject of his master's thesis.

In Brazil, a number of modern religious movements based on the use of ayahuasca have emerged, the most famous of them being Santo Daime and the União do Vegetal (or UDV), usually in an animistic context that may be shamanistic or, more often (as with Santo Daime and the UDV), integrated with Christianity. Both Santo Daime and União do Vegetal now have members and churches throughout the world. Similarly, the US and Europe have started to see new religious groups develop in relation to increased ayahuasca use. Some Westerners have teamed up with shamans in the Amazon rainforest regions, forming ayahuasca healing retreats that claim to be able to cure mental and physical illness and allow communication with the spirit world. Some reports and scientific studies affirm that ritualized use of ayahuasca may improve mental and physical health.^[9]

In recent years, the tea has been popularized by Wade Davis (*The Serpent and The Rainbow*), English novelist Martin Goodman in *I Was Carlos Castaneda*^[10] Wikipedia:Link rot, Chilean novelist Isabel Allende, writer Kira Salak, author Jeremy Narby (*The Cosmic Serpent*), author Jay Griffiths ("Wild: An Elemental Journey"), and radio personality Robin Quivers.

In 2008, psychology professor Benny Shanon published a controversial hypothesis that a brew analogous to Ayahuasca was heavily connected to early Judaism, and that the effects of this brew were responsible for some of the

most significant events of Moses' life, including his vision of the burning bush.

Research

Charles Grob directed the first major study of the effects of ayahuasca on humans with the Hoasca Project in 1993. "The Hoasca Project" ^[11], *maps.org* The project studied members of the União do Vegetal (UDV) church in Brazil who use hoasca as a sacrament.

Legal status

Internationally, DMT is a Schedule I drug under the Convention on Psychotropic Substances. The Commentary on the Convention on Psychotropic Substances notes, however, that the plants containing it are not subject to international control:

The cultivation of plants from which psychotropic substances are obtained is not controlled by the Vienna Convention. . . . Neither the crown (fruit, mescal button) of the Peyote cactus nor the roots of the plant *Mimosa hostilis* nor *Psilocybe* mushrooms themselves are included in Schedule 1, but only their respective principals, mescaline, DMT and psilocin.

A fax from the Secretary of the International Narcotics Control Board (INCB) to the Netherlands Ministry of Public Health sent in 2001 goes on to state that "Consequently, preparations (e.g. decoctions) made of these plants, including ayahuasca, are not under international control and, therefore, not subject to any of the articles of the 1971 Convention."

Despite the INCB's 2001 affirmation that ayahuasca is not subject to drug control by international convention, in its 2010 Annual Report the Board recommended that governments consider controlling (i.e. criminalizing) ayahuasca at the national level. This recommendation by the INCB has been criticized as an attempt by the Board to overstep its legitimate mandate and as establishing a reason for governments to violate the human rights (i.e., religious freedom) of ceremonial ayahuasca drinkers.

The legal status in the United States of DMT-containing plants is somewhat questionable. Ayahuasca plants and preparations are legal, as they contain no scheduled chemicals. However, brews made using DMT containing plants are illegal since DMT is a Schedule I drug. That said, some people are challenging this, using arguments similar to those used by peyotist religious sects, such as the Native American Church. A court case allowing the União do Vegetal to import and use the tea for religious purposes in the United States, *Gonzales v. O Centro Espirita Beneficente Uniao do Vegetal*, was heard by the U.S. Supreme Court on November 1, 2005; the decision, released February 21, 2006, allows the UDV to use the tea in its ceremonies pursuant to the Religious Freedom Restoration Act. In a similar case an Ashland, Oregon based Santo Daime church sued for their right to import and consume ayahuasca tea. In March 2009, U.S. District Court Judge Panner ruled in favor of the Santo Daime, acknowledging its protection from prosecution under the Religious Freedom Restoration Act.

Religious use in Brazil was legalized after two official inquiries into the tea in the mid-1980s, which concluded that ayahuasca is not a recreational drug and has valid spiritual uses.^[12]

In France, Santo Daime won a court case allowing them to use the tea in early 2005; however, they were not allowed an exception for religious purposes, but rather for the simple reason that they did not perform chemical extractions to end up with pure DMT and harmala and the plants used were not scheduled.^[13] Four months after the court victory, the common ingredients of ayahuasca as well as harmala were declared *stupéfiants*, or narcotic schedule I substances, making the tea and its ingredients illegal to use or possess.^[14]

Legal issues

Ayahuasca has also stirred debate regarding intellectual property protection of traditional knowledge. In 1986 the US Patent and Trademarks Office allowed the granting of a patent on the ayahuasca vine *B. Caapi*. It allowed this patent based on the assumption that ayahuasca's properties had not been previously described in writing. Several public interest groups, including the Coordinating Body of Indigenous Organizations of the Amazon Basin (COICA) and the Coalition for Amazonian Peoples and Their Environment (Amazon Coalition) objected. In 1999 they brought a legal challenge to this patent which had granted a private US citizen "ownership" of the knowledge of a plant that is well-known and sacred to many indigenous peoples of the Amazon, and used by them in religious and healing ceremonies.

Later that year the PTO issued a decision rejecting the patent, on the basis that the petitioners' arguments that the plant was not "distinctive or novel" were valid. However, the decision did not acknowledge the argument that the plant's religious or cultural values prohibited a patent. In 2001, after an appeal by the patent holder, the US Patent Office reinstated the patent. The law at the time did not allow a third party such as COICA to participate in that part of the reexamination process. The patent, held by US entrepreneur Loren Miller, expired in 2003.

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